6-5: Economics, development and governance in sustainability education (6: Education)

AUTHOR(S):

Mori, Akihisa

6-5

Economics, development and governance in sustainability education

Akihisa Mori

6-5-1 Introduction

This section focuses on education and research involving the economics and governance of sustainable development and discusses unique features that contrast with environmental economics. It then considers what these unique features require of education in the economics of sustainable development and examines ways to address these requirements.

6-5-2 Environmental economics and the economics of sustainable development

The first textbook on environmental economics written by Japanese scholars was *Environmental Economics* by Kazuhiro Ueta and colleagues, which was published in 1991 (Ueta et al., 1991). In the two decades since its publication, various other textbooks on environmental economics by Japanese scholars have appeared, and foreign textbooks have also been translated into Japanese. Universities have introduced lectures on environmental economics and hired full-time faculty members in the field. In addition, there is an increasing number of academic associations that investigate and discuss environmental economics, law, policy, business administration and sociology, and the number of researchers and students participating in such associations has been rising.

Sustainability science: A multidisciplinary approach, Komiyama, Takeuchi, Shiroyama and Mino (eds), United Nations University Press, 2011, ISBN 978-92-808-1180-3

At the same time, the research topics and fields that environmental economics covers have also expanded. First of all, greater attention is being paid to intergenerational and cross-spatial issues. In the past, environmental economics dealt with the contemporaneous effects of environmental degradation on residents in a given neighbourhood. However, as seen in transboundary pollution and climate change, an environmental problem occurring at a particular point in time potentially has intertemporal and cross-border implications; in other words, it can affect future generations as well as the entire planet. In proposing projects or policies with potential environmental impacts, it is necessary to consider the effects on and interests of not only a small set of contemporary parties, but also a broader group of stakeholders. In addition, it is necessary to take into account global effects as well as sustainability and intergenerational equity when deciding environmental targets and policy measures.

Secondly, environmental economics is now concerned not only with policy measures but also with governance and social ramifications. Many researchers have recognized that command and control, the traditional model for major environmental policy measures, has become less effective and efficient. Moreover, judicial solutions are known to be too costly. Consequently, more attention is being paid to economic instruments such as taxes and emissions trading, and voluntary approaches such as ecolabels, environmental management systems and information-based programmes. Because these instruments give wider discretion to the private sector, many have started to advocate shared responsibility. In other words, responsibility should be borne not only by the Ministry of the Environment, the central government agency mandated to deal with environmental issues, but also by various actors including other central government agencies, local governments, private companies and civil society. This has led to calls for consideration of issues relevant to environmental governance, such as participation, transparency and accountability, and to social aspects of sustainable development, such as social capital and empowerment. These two kinds of expansion in the field of environmental economics imply a need for the field to evolve into what is referred to as the "economics of sustainable development".

However, even if environmental economics becomes the economics of sustainable development, the fundamental purpose of the field will not have changed since the publication of *Environmental Economics* in 1991. That purpose is (a) to clarify the economic and institutional mechanisms that lead to environmental degradation or prevent sustainable development, (b) to explain economic mechanisms and conditions for realizing both development and environmental conservation, and (c) to design institutions and policies to assist in policy-making that enables various

actors to take action. This aim stems from the fact that both environmental economics and the economics of sustainable development are problem-solving oriented. For educational purposes, however, differences in view, goal and logic should be kept in mind.

6-5-3 Differences in view, goal and logic of problem-solving

One influential environmental discourse is green neo-liberalism, which the World Bank has employed in extending sector adjustment loans. It advocates market-based policy instruments and governance under the existing market mechanism. It ascribes environmental problems to the misallocation of natural resources and thus to the undervaluation of land, forests, mineral resources and water, as well as to open access to communities' land and resources and the provision of services at prices below cost. It recognizes that the governments of developing countries have supported the lives of low-income families and have gained a large rent by intentional undervaluation and under-pricing of natural resources, and that the land and resources managed by communities have been virtually made open for access, leading to excessive use and increased illegal usage. Based on such observations, this logic calls for private property rights to natural capital, appropriate valuation and an increase in the price of services as policy instruments to curb excessive use. It also calls for enhancement of monitoring capabilities by granting communities basic rights to use environmental resources as well as the creation or reorganization of government environmental protection agencies, the establishment of national research centres for environmental policies, and the training of groups of environmental specialists as means for efficiently implementing market-based environmental management.

However, measured value depends on the allocation of rights and institutions. For example, automobiles generate negative externalities such as accidents, air pollution, pavement damage and traffic congestion. When pedestrians and bicycles have priority in using the roads, the negative externalities for which one automobile must compensate are several dozen to several hundred times greater than when automobiles have priority. This is because, when pedestrians and bicycles have priority, investment must be made to allow for automobile traffic without violating their rights, whereas such investment is not necessary when automobiles have priority (Uzawa, 1974).

Another influential environmental discourse is ecological modernization. This discourse sees environmental degradation as a structural problem that can be dealt with only by attending to how the economy is organized, but not in a way that requires an altogether different kind of

political-economic system (Hajer, 1995: 25). It recognizes that market failure arising from negative externalities causes environmental problems and sees the solution as internalizing externalities within a market mechanism. Negative externalities undermine the function of the market, preventing it from achieving efficient resource allocation. The Piguvian tax is seen as a remedy for this type of market failure. Environmental capacity development is also required that integrates environmental and developmental concerns at all levels, aims to strengthen institutional pluralism, belongs to and is driven by the community in which it is based, and involves a variety of management techniques, analytical tools, incentives and organizational structures in order to achieve a given policy objective. But environmental taxes impose higher political, economic and social costs, at least in the short term, and may arouse fierce opposition. Packaging with well-functioning environmental governance is required to apply pressure on firms vertically through local residents, non-governmental organizations, consumers, stockholders and international organizations, as well as the national government, and horizontally through competitors.

However, the internalization of negative externalities does not necessarily guarantee environmental sustainability. Internalization of negative externalities leads to environmental conservation or emissions reduction up to the level where marginal cost is equal to marginal benefit, given existing technology and knowledge.

The economics of sustainable development, on the other hand, sets a policy goal of ensuring sustainability. The concept of sustainability can be classified into strong and weak sustainability. Strong sustainability calls for the preservation of the physical stock of specific forms of natural capital that are regarded as non-substitutable, that is, critical natural capital. It requires controlling human activities within the limits of environmental capacities, leaving a safety margin, and taking into account uncertainties in and ignorance of environmental impacts. This view of sustainability requires the precautionary principle and preventive measures before there are definite scientific results "proving" that protection of the environment is necessary, or the shift of burden of proof to would-be environmental disrupters to demonstrate that their actions will not result in unacceptable ecological damage.

In contrast, weak sustainability refers to a non-decreasing production base for coming generations that is composed of institutions plus an aggregate of physical capital, human capital and natural capital, or the sum of these three types of capital measured in terms of their shadow prices, that is, inclusive wealth (Dasgupta, 2007). Weak sustainability differs from strong sustainability in its assumption of infinite substitutability between natural and physical capital. Weak sustainability, or the maintenance of the level of consumption for each generation, can be achieved as long as

economic rents derived from the exploitation of exhaustible natural resources are invested in other forms of capital capable of yielding an equivalent stream of income in the future. It can also be achieved after attaining a certain level of income even if the environment is damaged by excessive use of natural capital at the initial stage of economic growth.

This view leads to the logic of ecological modernization. Ecological modernization assumes the rationality of capitalism and the market as driving forces for environmental conservation. However, it differs from green neo-liberalism in that it considers firms to be the main cause of environmental damage and supports economic instruments such as environmental taxes and fees as policy measures to advance super-modernization through technological innovation and social structural transformation. Taking into account the experiences of Western Europe, ecological modernization also advocates an optimal policy mix consisting of regulations, economic instruments and voluntary approaches to give firms wider discretion, as well as the creation of an integrated, predictable and comprehensive framework for environmental regulation and management. As a way to convince firms to comply with these policies, this logic calls for higher environmental awareness in civil society and the participation of diverse actors for efficient environmental governance, as well as the creation of ecological lead markets.

6-5-4 Different logics for poverty and environmental degradation

The debate on poverty and the environment provides a good example for students to learn about the above differences in the prevailing discourses. Many people living on land that is infertile, dry, unsuitable for cultivation owing to steep slopes, ecologically vulnerable or prone to floods or other natural disasters are forced to live in severe poverty. In regions with a large population living on ecologically vulnerable land, people tend to overuse such land, rendering it ecologically unrecoverable in the future. This makes people poorer and further accelerates environmental degradation. This is referred to as the “poverty–environment trap”.

Traditional views have assumed that the poverty–environment trap is caused by the livelihood of the poor. In other words, poor people in rural areas live in an ecologically vulnerable region, depend heavily on natural resources and do not have alternative means to support their lives. They often engage in low-productivity agricultural practices such as shifting cultivation and slash-and-burn farming. Also, their attempts to compensate for high child mortality and short life expectancy cause relatively high birth rates and population growth. This in turn increases the number

of poor people while access to productive land remains limited. People have no choice but to overuse natural resources in order to support their lives and to escape from poverty. A short-term, myopic perspective leads them to abuse these natural resources without making proper investments in them. This results in deforestation, soil degradation, destruction of watershed and vegetation and other environmental damage, which in turn lead to the loss of livelihood because of a rise in physical damage and human disasters caused by floods and droughts, a fall in agricultural productivity and a decrease in income from forest products. To sustain their livelihood, poor people depend further on natural resources, accelerating environmental degradation. Or they may migrate to cities and form urban slums in ecologically dangerous areas, such as the neighbourhoods around factories, further degrading the sanitation of cities.

Based on the above assessment, this view calls for the control of population increases and of short-sighted practices as the means of eliminating the poverty–environment trap and regards economic growth and the assignment of private property rights to land as the most effective policy instruments to this end. The logic behind green neo-liberalism is derived from this view.

In contrast, a more recent view argues that, even if the poverty–environment trap has in fact been growing worse and is caused by the poor, the responsibility rests not only with them but also with institutions and policies. Not uncommonly, and often through their past experiences and traditional local ceremonies, customs and folklore, the poor understand the negative impacts of environmental degradation on their health and livelihood as well as the significant positive effects of access to natural resources and the quality of the environment on their ability to maintain their livelihood. These people have an incentive to conserve the environment. However, the economic rent obtained by exploiting natural resources is mainly distributed to the rich and is used for further exploitation of those resources; it is rarely used to accumulate assets for and reduce the vulnerabilities of the poor. This uneven distribution of wealth, together with the voicelessness and powerlessness of poor people, drives them to the intensive use of natural resources and consequently into situations in which they have to destroy their own assets. In countries where the government does not legally recognize the community's traditional entitlement to common-pool resources, the poor lose the means to mitigate vulnerabilities such as bad weather and natural disasters. In addition, countries in need of funds for new development or to overcome foreign debt have been forced to accept and implement policy reform packages based on the logic of green neo-liberalism advocated by the World Bank and other multinational development agencies in exchange for financial assistance.

The above view suggests entirely different policy implications. The most effective policy is not to engage poor people in activities leading to economic growth, but to increase their assets and reduce their vulnerabilities. This logic calls for the empowerment of local communities and the restructuring and enhancing of traditional regional networks. At the same time, it requires policies and institutions that make the accumulation of assets easier for the poor, including granting and protecting clear and enforceable property or usage rights of local communities and user groups to land and common-pool resources, offering social services and goods that the private sector cannot provide, and improving the transparency of decision-making and accountability. Furthermore, it requires debt reduction and the redesign of rules for international trade to recover the self-decision capacity that governments have been deprived of in the process of debt repayment, structural adjustment and globalization.

6-5-5 An implication for pedagogy

Even if environmental economics and the economics of sustainable development are oriented towards solving problems, they will fall into the category of mere knowledge rather than guidance if students are taught by means of lectures. Students need to learn through an actual decision-making process, but it is rare for students to come across situations where they have to make decisions in real society, even if they undertake an internship.

The case method of instruction offers students the opportunity for simulated experience. It was originally developed as a pedagogy for law school and master's programmes in business administration to identify optimum decisions in a specific context. Usually, a case is described before or during a lecture, along with the backgrounds, strategies and positions of important stakeholders. Through the analysis of context, causes, risks and stakeholders, and through group study and discussion, students are required to propose alternatives or to evaluate decisions. Projects, programmes and policies on the environment and sustainable development can serve as cases for instruction, although their contexts, stakeholders and performances are much more complex and obscure than those of business administration or court cases.

Cases are often taken from decision-making in the past. They contain a variety of views, logic and options that students could use in a specific context, as well as the consequences of that decision. More often than not, however, instructors face difficulties in finding cases that fit their instruction purposes in existing textbooks. They have to seek out cases. Finding new cases necessarily entails evaluation, which does not exist in-

dependently of the views and logic behind the decision-making. In environmental economics, evaluation often is concerned with efficiency, employing cost/benefit analysis of a project or policy and valuation of the environment. In the economics of sustainable development, however, evaluation includes not only efficiency but also relevance and effectiveness in terms of the degree of achievement, impact and sustainability, as proposed by the Organisation for Economic Co-operation and Development in relation to development assistance. Recent evaluation emphasizes legitimacy in terms of participation, transparency and opportunities for presenting opinions, as well as processes of stakeholder empowerment and trust-building, vision-sharing and usefulness for policy learning (Crabbé and Leroy, 2008).

The case method of instruction can also help students prepare for field studies. Recently, many universities have included field studies and internships as part of their curriculums. In reality, however, students may easily become fed up with the challenges of the field, lose sight of the focus of their study and end up engaged in aimless surveys. Case studies and the case method of instruction will train students in the methods they can employ to understand and analyse specific fields and cases. However, few teaching materials for case studies and the case method of instruction have been developed so far regarding the environment and sustainable development. Even fewer evaluate cases that consider the three pillars of sustainability: environmental, economic and social sustainability, which in reality can be inconsistent. It is imperative that teaching materials are developed that directly focus on proposals and evaluations that address these three pillars in the case method of instruction.

6-5-6 Conclusion

This section has focused mostly on the economics of sustainable development. The economics of sustainable development is oriented towards solving problems and aims to support policy-making, but it currently involves different logics, including green neo-liberalism and ecological modernization. This is because no universal logic has been established for achieving environmental sustainability while simultaneously enhancing human development and social sustainability. Although no universal logic yet exists to deal with these various problems, case studies and the case method of instruction can be effective teaching methods to prepare students for in-depth fieldwork by instructing them in analytical methodology and allowing them to undergo simulated experiences. The development of teaching

materials for the case method of instruction relevant to sustainability remains a challenge.

REFERENCES

Crabbé, A. and P. Leroy (2008) *The Handbook of Environmental Policy Evaluation*. London: Earthscan.

Dasgupta, P. (2007) *Economics: A Very Short Introduction*. Oxford: Oxford University Press. (Japanese translation by K. Ueda, R. Yamaguchi and Y. Nakamura. Tokyo: Iwanami Shoten.)

Hajer, M. A. (1995) *The Politics of Environmental Discourse: Ecological Modernization and the Policy Process*. Oxford: Oxford University Press.

Ueta, K., H. Ochiai, Y. Kitabatake and S. Teranishi (1991) *Kankyo Keizaigaku* [*Environmental Economics*]. Tokyo: Yuhikaku Books (in Japanese).

Uzawa, H. (1974) *The Social Cost of Automobiles*. Tokyo: Iwanami Shoten (in Japanese).